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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WALKER, KEITH D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/665,509	Applicant(s) TSUKAMOTO ET AL.	
	Examiner KEITH WALKER	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 58,59 and 66-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 58,59 and 66-88 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Remarks

Claim 88 is new and claims 58, 59 & 66-88 are pending examination as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 58, 59, 66-71, 84, 86 & 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,053,687 (Coibion) in view of US 6,399,242 (Kitoh).

Coibion teaches a method of making a spiral wound battery with a pin extending from a first end cap that seals a first opening in the case. The first end cap includes an electrical insulator in the pin is hermetically sealed to the electrical insulator. An electrode is electrically attached to the pin and a second electrode is attached to the second end cap and electrically insulated from the pin (Abstract, Fig. 9; 5:65-6:35). The electrodes are wound around a slotted pin and the electrode tabs are welded to the pin (Fig. 6 & 8; 5:20-65).

Kitoh teaches a second end cap sealing a second opening and electrically attached to the second electrode and attaching a tab such that the flat portion of the tab is attached to the inner face of the second end cap, such that the tab extends past a center point of the second end cap (Fig. 2; 4:39-68). The tabs are connected for a

distance less than the radius. This configuration allows for the two leads to be located on the same side of the battery, allows the battery to have excellent reliability and have low processing costs while making the battery larger (Abstract; 1:35-45). Furthermore, a reduction in the battery's internal resistance is realized (2:20-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the tabs of Coibion with the connecting tab locations taught by Kitoh to decrease the internal resistance of the battery and produce a reliable battery with lower production costs.

While Coibion and Kitoh are silent to filling the battery with electrolyte, it would be obvious to one of ordinary skill in the art at the time of the invention to realize the batteries require electrolyte to operate and so require the batteries to be supplied with electrolytic fluid. Filling the battery case with electrolyte using either of the first or the second openings would be obvious to one of ordinary skill in the art for obtaining the same desired result by essentially the same method.

Regarding claim 66, while Kitoh is silent to the connection between the tab and the second end cap being welded, Kitoh teaches welding the tabs to the electrodes and welding the tabs together to form a strong bond that reduces oxidation and therefore internal resistance. Welding is also well known in the art to form a mechanically strong and electrically strong bond between components.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the connection taught by Kitoh with a welded

connection to form a bond that is electrically sound free from oxidation problems and mechanically strong.

2. Claims 72-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,053,687 (Coibion) in view of US 6,399,242 (Kitoh) as applied to claim 70 above and further in view of US 6,033,795 (Broussely).

The teachings of Coibion and Kitoh as discussed above are incorporated herein.

Coibion is silent to a mandrel used with the pin, such that the electrodes are wrapped around the pin and the mandrel.

Broussely teaches spiral wound electrochemical cell having an inner wall for improving the safety of the battery (Abstract). The electrode group is wound around a hollow mandrel tube that is perforated so the gases can more easily be exhausted from the battery. The mandrel is attached to the center pin by crimping (Fig. 6-8; 2:30-40, 6:50-7:10). Welding two components together is a well known means of attachment, and while crimping the mandrel to the pin is taught by Broussely, it would be obvious to one skilled in the art to use a welding means for attachment since welding provides a physically stronger hold and an electrically better connection. While Broussely is silent to a longitudinal slot in the mandrel, it would be obvious to one skilled in the art at the time of the invention to incorporate a slot in the mandrel so it would allow the electrode of Coibion to pass through to the center pin.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the pin of Coibion with the mandrel of

Broussely in order to improve the safety of the battery by allowing a means of escape for the internal gas of the battery.

Regarding claim 78, Broussely is silent to using titanium for the mandrel; however, it would be obvious to one skilled in the art to choose a material for its intended purpose based on the characteristics of the material. In the case of titanium, the material is strong, light and corrosion resistant. As no criticality is given to the use of titanium, it would be obvious to one skilled in the art to use titanium for its inherent characteristics.

3. Claims 72-75 & 79-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,053,687 (Coibion) in view of US 6,399,242 (Kitoh) as applied to claim 70 above and further in view of US 4,604,333 (Ikeda).

The teachings of Coibion and Kitoh as discussed above are incorporated herein.

Coibion is silent to a mandrel mounted on the pin.

Ikeda teaches a mandrel having a C-shape and including a tube that covers a pin for wrapping the electrodes around (Fig. 1 & 7; 3:10-30). The electrode is in electrical communication with the pin and the substrate is between the mandrel and the pin but without the active material between the two (Fig. 5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the pin of Coibion with the mandrel of Ikeda to form a heat resistant member around the pin (3:20-30).

4. Claim 85 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,053,687 (Coibion) in view of US 6,399,242 (Kitoh) as applied to claim 58 above, and further in view of US 5,755,759 (Cogan).

The teachings of Coibion and Kitoh as discussed above are incorporated herein.

Coibion is silent to the use of Pt-Ir alloy as the pin.

Cogan teaches a biomedical device wherein the wire electrode is made of Pt-Ir alloy because it can record or stimulate physiological function (3:43-56).

Therefore, it would have been obvious to one of ordinary skill in the art to use Pt-Ir alloy as the pin onto the battery of Coibion, because Cogan teaches the alloy can be used in implantable medical device.

5. Claims 58, 67, 68 & 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,387,561 (Nemoto) in view of JP 2000-090977 (Yanai).

Nemoto teaches a method of constructing a battery with electrodes wound around a pin and an electrode is electrically isolated from the pin and electrically attached to a second end cap (Fig. 1; 11:35-12:10). The electrolyte is transported into the case through the second opening and then the second opening is sealed with the second end cap (Fig. 17; 3:15-45). When the electrolyte is filled into the case, the cap is taught as being tilted up. However, it would be obvious to one of ordinary skill in the art to tilt the lid in a manner that would allow the end cap to rest on the outer side of the battery and therefore be self supporting while the battery is filled.

Nemoto is silent to a pin in electrical communication with one of the electrodes extending through a first end cap and the tab of the second end cap extending from a first point through a center point to a second point.

Yanai teaches a method of making a battery with electrodes wound around a pin such that the pin is in electrical communication with one of the electrodes extending through a first end cap and the tab of the second end cap extending from a first point through a center point to a second point (Fig. 1; Abstract, [0012-0014, 0016]). This arrangement allows for a threaded terminal to protrude from the case as taught by Nemoto but has a highly efficient discharge performance.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Nemoto with the configuration of Yanai to produce a more efficient discharging battery.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 58, 59 & 66-88 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 66-91 of U.S. Patent No. 7,378,181 in view of US 6,399,242.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim the process of forming a battery that will have to be hermetically sealed by the end cap to prevent the degradation of the electrodes and electrolyte. The instant application recites two end caps electrically attached to two different electrodes and the '379 application does not. However, as discussed in the above rejection, it is well known in the art to use two end caps having different electrical poles.

Response to Arguments

Applicant's notation of the mistaken inclusion of Teramoto is correct and reference to Coibion instead of Teramoto was intended. This typographical error has been corrected.

Applicant argues the combination of Coibion with Kito would not result in the claimed invention since Coibion does not teach a second opening. However, the

second opening, along with the tab placement, is taught by Kitoh and so the combination would result in a battery with a second opening as claimed.

Regarding claim 88, since this was a new claim, a new rejection was required. As this new claim depended from claims 68, 67 & then 58 respectively, to properly reject claim 88 the parent claims required being addressed and rejected.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Keith Walker/
Primary Examiner, Art Unit 1795